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REVIEW ARTICLE

Roots of language. By DEREK BICKERTON. Ann Arbor: Karoma, 1981. Pp. xiii, 351. \$24.95.

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Not only because Bickerton has succeeded in making a linguistic problem interesting beyond the confines of the discipline—and not only because of the wit and the clarity of his book—but especially because of the cogency and coherence of his vision, *Roots of language* merits the attention it is receiving. Here the book will be approached from various perspectives: the origins of B's thinking, its precise relation to the generativist research program, and its position within the field of creole studies. Most important, of course, is an appraisal of the argument, and the evidence presented for it. I will start with a summary.

The structure of B's argument is quite transparent. In Chap. I, he shows that a number of syntactic differences exist between Hawaiian Creole English (HCE) and its immediate ancestor, Hawaiian Pidgin English (HPE). These differences reflect developments which cannot be explained in terms of the contributing prestige language (English) or non-prestige languages (primarily Japanese and the Philippine languages), but must be the result of some general cognitive strategies at the disposal of the generation of learners that 'created' HCE.

To see whether these cognitive strategies are part of a general, not exclusively linguistic problem-solving capacity—or rather, part of a very specific 'language faculty'—Chap. II is dedicated to comparing HCE syntax with that of other creole languages. B concludes that these creoles indeed share numerous syntactic features with HCE. Thus he concludes that the cognitive strategies by which creoles have been derived from their unstructured pidgin ancestors are specific to language, part of the genetically-transferred and species-determined 'bio-program'. Otherwise, there would be much more variety than B has found.

But the bio-program which assists children in creatively constructing a full-fledged creole language must also be available to children learning or reconstructing already existing languages; hence B's Chap. III reviews language acquisition studies. Two types of evidence are deemed relevant here: creative 'mistakes', and evidence of early acquisition of specific categories and distinctions. Even though B's discussion is based on a somewhat cumbersome and tentative re-analysis of published material, gathered for quite different purposes, he concludes that considerable evidence exists for a bio-program conception of natural language acquisition.

Chap. IV turns to the much more nebulous question of the origin of language in general. B argues at length that, preceding any emergence of language proper, some rather elaborate cognitive structure must have existed, in the form of distinctions available to pre-hominid species. These distinctions, B claims, are the same as those which are most basic to creoles, and as those which children acquire earliest and most automatically. In that sense, creole genesis and first-language acquisition both recapitulate, on a somewhat more abstract level, the

genesis of language. The study of creole languages then becomes crucial to universalist linguistics, because it shows something of the natural state of language, not yet overlain by all kinds of culturally determined changes.

The main part of this review will be dedicated to reviewing the evidence from creoles that B adduces for his hypothesis. Before that, however, some other issues need to be cleared away.

B's thinking in *Roots* is part of the essentially Romantic tradition which considers creole languages somehow to represent a natural state. This goes back to Bickerton 1974, in which the strikingly parallel development of creole Tense/Mood/Aspect (TMA) particle systems is explained in terms of a universal, neurolinguistically-based, cognitive map, much as in *Roots*. The relevant distinctions—(non-)anterior, (ir-)realis, and (non-)punctual—arose because they are the primary ones that a language user needs to make sense of the world. The most important external influence in that paper (acknowledged by B) was Givón 1974, which deals mainly with West African Krio verb serialization; there the universal cognitive structures of B's approach were termed the 'universal substratum' on which a learner can draw when constructing a grammar of an incompletely accessible target. The alternative, of course, is a 'particular substratum', the grammar of a particular language or linguistic family which may influence the reconstruction process. A slightly different approach was taken in a paper of the same period by Kay & Sankoff 1974, where universal processes are claimed to be involved in the genesis of pidgins, not creoles (contrary to B's position then and now).

B's 1974 paper influenced the course of creole studies considerably, and *Roots* summarizes in part the results of the work thus inspired. In a series of studies on New Guinea Tok Pisin since 1974, Sankoff and her associates have argued that the expansion in its use over several generations, rather than the cognitive requirements of a single generation of creole creators (as B has it), has led to the elaboration of Tok Pisin as a native language (cf. Sankoff 1980). This line of research is largely ignored by B, for reasons to be discussed below—but mainly to his detriment. Finally, B also ignores work related to the Stanford Universals Project (Greenberg et al. 1978), some of which is remarkably close to the spirit of B's work (cf. Traugott 1978, which pays considerable attention to creoles).

Readers of *Roots* will recognize and, perhaps, in many cases be moved by the same fervor that was generated by, e.g., Chomsky 1968. The methodological postulates and the aims of B's research program seem identical with those of the generativist program. To be sure, B notes that the generativist program assumes instantaneous acquisition, while the bio-program model postulates a dynamic expansion; but the instantaneity assumption is surely no more than an abstraction—characteristic of earlier studies in the generative paradigm, but now abandoned in favor of parameter theory and other 'dynamic' models of acquisition.¹ The main difference which emerges is that the core of B's results

¹ In the exchange between Harnad and Chomsky from which B quotes the beginning (Harnad et al. 1976:57), Chomsky goes on to compare the language faculty to other organs, some of which mature long after birth.

is a set of paradigmatic semantic distinctions, assumed to be part of the bio-program; but the Chomskyan tradition, of course, is directed toward syntagmatic, configurational constraints. This focus on semantic paradigms, I will attempt to show, is latent but pervasive in B's work.

I am not sufficiently familiar with the literature on language origin, primate communication, or first-language acquisition to provide a knowledgeable critique of the ideas presented in B's Chaps. III–IV, or to say how representative B's sources are. Thus I will focus on the creole data, on the extent to which they support the bio-program hypothesis, and on their relevance for the acquisition and language origin discussions.

A survey of the creole data is given in Table 1, which will serve as a basis for discussion. Note that, although HPE shows different word-orders depending on the ethnic origin of its speakers, B claims that HCE has basic SVO order and two movement transformations: Object Fronting and Predicate Fronting.

First, something about SVO order (item A). It is remarkable that none of the orders characterizing HPE survive in HCE; but SVO is of course the order of the English superstrate. It is a fact that virtually all creoles have SVO order (the exceptions being perhaps Sri Lanka Portuguese Creole with SOV (I. Smith 1979), and Afrikaans with SOV/V-2nd, but both may have had too much superstrate input for B to consider them.) Indeed, most European target languages (cf. French, Portuguese, Spanish) also have that order, and most West African potential contributors as well. Still, it is striking that the flexibility of Spanish and Portuguese in allowing verb-initial order has disappeared entirely in the Portuguese creoles and in Papiamentu—for reasons similar, I will show, to that which explains the contrast between HCE and Guyanese Creole English (B, p. 53). Remarkable also is the fact that Negerhollands, a Dutch Creole, has SVO (even though Dutch is SOV/V-2nd, and Dutch 'foreigner talk' being mostly SOV). Perhaps the strongest evidence thus far that the creole SVO order does not simply result from the contributing languages, but is typical of language genesis in general, is provided by the recently described Berbice Dutch Creole (Robertson 1982), which was demonstrably created by a majority of Ijo-speaking slaves (Ijo being one of the rare SOV languages of West Africa) with Dutch input.² Thus SVO may be characteristic of creole genesis; but if we take the acquisition data seriously, it is disqualified for the bio-program: I am aware of no evidence that children impose SVO on other types of input. The other problem, of course, is that no plausible account has yet been given to explain why subsequent 'cultural languages' (B, 296) would develop SOV orders out of the biological SVO order.

B's account of movement rules in the creoles (items B–E in Table 1) makes the following claims:

- (a) All movement is leftward.
- (b) All movement rules serve to focus the moved constituent.
- (c) The fact that a moved verb leaves a copy behind, in its original site, results from perceptual constraints.
- (d) The presence or absence of an introductory particle is related to the degree of superstrate influence.

All these claims are problematic. To begin with item D, B's own data (21) show that HCE does not have Predicate Fronting, but rather has Subject NP Postposing, hence rightward movement. Consider his example:

- (1) *difren bilifs dei get, sam gaiz* 'Some guys have different beliefs.'

Presumably this is derived from

- (2) *sam gaiz dei get difren bilifs.*

B claims this happens through Predicate Fronting and Object Fronting; but the placement of *dei* shows that this cannot be correct. If *dei* were adjoined to the subject, as B claims (p. 36, tree 83),

² N. Smith et al. (ms) show that Berbice Dutch Creole contains a large non-Dutch vocabulary, much of which is again traceable to Ijo—far more than to any other African language.

| | HPE | HCE | GCE | JCE | CCE | SRA | MCF | SCF | RCF | HCF | PAP | STC | CRI | PAK | ALMOST |
|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--------|
| A. *SVO | — | + | | | | | | | | | | | | | + |
| B. Object/Adverb Fronting | — | + | | | | | + | + | + | | | | + | | |
| C. cop and Object/Adverb Fronting | | | + | | | | | | | | | | | | |
| D. *Predicate Fronting | | + | — | | | | | | | | | | | | |
| E. *V Fronting | | — | + | | | | | | | | | | | | |
| F. Article system of HCE | — | + | + | | | | | | | | | | | | + |
| G. TMA system of HCE | — | + | + | | | | | | | | | | | | + |
| H. *Realized/Unrealized | — | + | | + | | + | + | | | * | * | | | | |
| I. * <i>Deili</i> copying and A/A | — | + | | | | | + | + | | | | | | | |
| J. *Relative pronouns | | — | | | | | | | | | | | | | + |
| K. *Negation indef. subj. | | ? | + | | | | | | | | | | | + | + |
| L. Existential/Possessive | | + | + | | | | | | | + | + | + | | | |
| M. *Copula system | | | | | | | | | | | | | | | + |
| N. *Adjectives/Verbs | | + | + | + | | | | + | | | * | | | | + |
| O. Questions without movement | | | + | | | | | | | + | | | | | + |
| P. *WH Movement | | | | | | | | | | | | | | | + |
| Q. Compound WH-words | | | + | | + | | | + | + | + | * | + | | | + |
| R. Passive through diathesis | | + | + | + | | | | | | | | | | | + |

TABLE 1.

Schematic representation of the creole evidence in B's Chaps. I–II for the 'bio-program' hypothesis. An asterisk at the beginning of a row refers to conceptual difficulties discussed in this review. An asterisk in the matrix itself refers to a counter-example to one of B's general claims. A blank means 'unspecified by B'. The points without an asterisk will not be explicitly discussed in this review.

Abbreviations for languages: HPE, Hawaiian Pidgin English; HCE, Hawaiian Creole English; GCE, Guyanese Creole English; JCE, Jamaican Creole English; CCE, Cameroon Creole English; SRA, Sranan; MCF, Mauritian Creole French; SCF, Seychelles Creole French; RCF, Réunion Creole French; HCF, Haitian Creole French; PAP, Papiamentu; STC, São Tomé Creole Portuguese; CRI, Sénégal Creole Portuguese (Crioulo); PAK, Papia Kristang. ALMOST refers to 'all or most' creoles.

the following would result:

- (3) **difren bilifs get, sam gaiz dei*.

The same result obtains for VP Fronting if, as I would suggest (although it is impossible to argue this from the few examples given), *dei* is really part of AUX (or INFL, in the terminology of Chomsky 1981), in the same way as the Tok Pisin predicate marker *i*, and never part of the subject NP. It cannot, therefore, occur between the antecedent and the relative clause (cf. B, 35, exx. 76, 80). However, assuming that NP Postposing gives us the right result (when combined, of course, with Object Postposing), then HCE would differ from Guyanese Creole (53) in the same way as Italian from English: the fact that the AUX/INFL system contains a subject marker makes Subject Postposing possible. And this alternative analysis implies (a) that not all movement rules are focus-fronting; (b) that the difference between HCE and Guyanese Creole is not the presence of a VP node in the former; and (c) that B's invocation of Chomsky's A-over-A principle to account for the distribution of *dei* and similar markers in other creoles (36, 64) is unnecessary. In fact, *dei* must be separable from the subject, e.g. by an adverb (as shown by B's ex. 69, p. 34; see item I in Table 1, above).

Regarding item E: while many creole languages have an NP Fronting rule for focus (as do hosts of other SVO languages), the V fronting/copying rule, resulting in examples like the following from Guyanese Creole, is much rarer:

- (4) *a sii Jan bin sii wan uman* 'John had SEEN a woman.'

This type of rule also shows much more variation. In African languages like Bete (Koopman 1982) and Kikuyu (George Clements, p.c.) it is unbounded, as also in Haitian Creole (Piou 1982); but in Papiamentu it is clause-bounded. In Haitian Creole and in Guyanese Creole, it applies both to adjectives and to verbs; but in Papiamentu it applies only to verbs. (To be fair to B, this may be related to the fact that Papiamentu has a COP + ADJ construction, i.e. a separate class of adjectives, while Guyanese and Haitian Creole do not.) The semantics of the rule varies as well—in Papiamentu it is intensification; in Haitian Creole, verb focus; in Guyanese Creole, apparently both. A wider range of creole languages may yield even more differences. Finally, it should be mentioned that Haitian Creole has developed two parallel verb-fronting rules (cf. Piou). The unbounded one mentioned above, which signals focus, involves a marker *se*; but another, translatable by 'as soon as', lacks *se*, and is clause-bound:

- (5) *wè-l-wè žādam nā ap vini, ...*
 see-he-see police DET ASP come
 'As soon as he saw the policeman coming, ...'

As compared to the very regular Object/Adverb Fronting (item B), which (like the fronting of WH-elements, item P) may well figure in the bio-program, V Fronting shows great variety.

Although B's account of the article systems and the TMA systems in Chaps. II–III is admirably precise, his treatment of complementation (both in creoles and in acquisition) is marred by lack of precision. In Chap. II he gives a striking parallel between different creoles, to the effect that they differentiate realized vs. unrealized purposive complements (often marked with the equivalents of *go* vs. *for*); cf. Table 1, item H. But in Chap. III, we read that child speech and creoles resemble each other in having formal identity between embedded and non-embedded sentences (185), which suggests that creoles would originally not have had any infinitival complements at all. In fact, it is notable that most creoles have chosen parallel ways of creating purposive complementizers from prepositions (a fact acknowledged by B, 61) and finite complementizers from deictic elements (cf. Dreifuss 1977, Sankoff & Brown 1976). B's concept that the bio-program calls for complementizerless, tensed, embedded clauses is not supported by what we know of creole complementation systems (see Table 1, item J). His suggestion that creole relative clauses started out without relative clause markers (62) is not supported by any historical evidence that I know (cf. Dreifuss), except Sankoff & Brown's discussion of Tok Pisin relatives. To be sure, B excludes Tok Pisin from the creole languages under consideration, because the pidgin preceding it had a chance to expand without being a native language; but it is striking to see that Tok Pisin conforms to as many components of the bio-program as other, more 'bona fide' creoles. Thus it has serial verbs:

- (6) *kisim long Labaul na i-KISIM i-KAM*.
 'They get them in Rabaul and bring them.'
 (7) *na i-KISIM i-GO plantim long ples bolong em*.
 'and they get them and they go plant them in their own place.'

(Cf. Fischer 1966:56 ff., where this type of example abounds, and the extensive discussion of Tok Pisin serialization in Mühlhäusler 1979.) Tok Pisin has also developed an auxiliary system with preverbal particles, categorial parallels between adjectives and verbs, and passives through diathesis. The Tok Pisin *ia* marker (cf. Sankoff & Brown) parallels the Haitian Creole *la* marker (Lefebvre 1982) in many respects. Clearly, Tok Pisin has features not found in other creoles, having been created in a rather different linguistic context and in a different way; but it also shares many features with other creoles. In fact, it should be mentioned that we know far too little about the early history of the Caribbean plantations to be sure that Tok Pisin is as atypical as B will have it.

B's discussion of negation (item K) is marred by the fact that he does not always distinguish universal quantifiers from other negated subjects (66, 194); his discussion is not sufficiently precise to be more than suggestive. Neither is his treatment of the copula (item M), of which he writes: 'Practically all creoles show some similarities in this area' (67). How much? More than a sample of other languages? Finally, the whole adjective/verb distinction problem (item N) has not yet been sufficiently developed theoretically to allow statements such as B's, to the effect that we have no reason not to treat adjectives as a subclass of stative verbs (69). While these classes share some semantic properties (leading to a similar connection with the TMA system), the evidence with regard to their syntactic properties is mixed, to say the least. A detailed discussion of the issue for Sranan is given by Sebba 1982.

The remainder of B's Chap. II is dedicated to two specific issues: the reality of his claims with respect to the general nature of the creole TMA systems, and a discussion of serial verbs. In the section on TMA systems (73–99), B shows himself at his argumentative best and his polemical worst, interpreting substantial agreement from a slightly different perspective as 'challenge' and 'attack'. A sample quote (77):

'Muysken's analysis is supported by two example sentences. The original form of the analysis he is attempting to undermine [sic], in Bickerton (1975, Chapter 2), is supported by ninety-eight example sentences. Further comment should be superfluous.'

In the study of creole languages, auxiliary preverbal particles have always been the focus of special interest. As mentioned above, they formed the basis of B's universalist claims; and B has done more than anyone else toward a precise identification and interpretation of the creole TMA systems. Now that he is trying to bring the study of creole languages into the mainstream of linguistics, he cannot avoid dealing with two types of issues. One is methodological: What level of abstraction is he willing to admit in dealing with the data? What is the precise relation between his main (bio-program) theory and a number of auxiliary theories, needed to handle recalcitrant data? This area is now buried in an argumentative barrage.

The second type of issue is the relation of the creole results to the work on auxiliary systems carried out (a) in generative grammar, from *Syntactic structures* to the theory of INFL in Chomsky 1981; (b) in typological studies, most extensively by Steele et al. 1981; and (c) in Tense and Modal Logic. Only scant attention is paid by B to these traditions—some of which have resulted in evidence supportive of B's thesis, and some in clearly contradictory evidence.

The end of Chap. II (99–132) is devoted to complementation. B seems to want to argue that the bio-program creoles have (or had) no such thing as non-finite clauses; this claim is taken up again in Chap. III, on acquisition. First, B shows that Guyanese Creole perception clauses have some finite characteristics: they can have nominative subjects and contain aspect markers. However, consider the impossibility of WH Fronting in

- (8) **A wa mi hia* [— *a nak?*]
 what I hear beating?

This cannot be attributed to the Propositional Island Constraint, as B claims (101), unless perception clauses are analysed as tensed 'bare' S's. Consider:

- (9) Who do you think [— saw Mary?]

This would differ from ex. 8 only in having a complementizer in the complement clause.

Second, B argues that the Guyanese Creole complementizer-like elements *se* 'factive', *go* 'definite purposive', and *fi* 'indefinite purposive' are not in fact complementizers, but serial verbs. This is plausible for *go*, given its limited distribution; it is possible for *se* (although the fact that *se* clauses cannot be fronted could result from the dependent status of *se* as a complementizer, e.g. necessarily co-superscripted with a higher verb of a certain type); and it is highly implausible for *fi* (which presumably corresponds [how?] to the *fu* discussed in earlier work by B). The evidence is the hypothetical ungrammaticality of extraction from a non-subcategorized *fi* clause from Providence Island Creole:

- (10) ?*WISAID ah waan di rien kom [fi ah don go —?]*
 where I want the rain come so I not go

WH Fronting is possible only out of subcategorized clauses, never out of adverbial purposives.

The third part of B's argument is directed toward establishing (a) that the serial verbs in creole languages do not result from a West African substratum, but rather from an autonomous process of grammar construction whenever a target language preposition was hard to learn (this is clearly reminiscent of Givón's treatment); and (b) that the serial verb constructions go back to finite sentential complements, in keeping with B's earlier claims. In my opinion, claim (a) is implausible; claim (b) is groundless; and claims (a) and (b) are incompatible. This is not the place to repeat the debate over substratum vs. universal development; substratum influence can only be made plausible, never proved, and the issue is structurally irrelevant. B explains the apparent absence of instrumental serial verbs in Saramaccan, and their presence in Sranan, by saying that the Portuguese preposition /*kō*/ or /*kū*/ 'with' was learnable for African slaves (so that it was incorporated into Saramaccan), but Eng. *with* was too marked phonologically to be incorporated into Sranan; this stretches the reader's credulity. In fact, the presence of serial verbs in creole languages can be represented on a two-dimensional implicational scale: one axis represents a series of thematic relations, from central (in terms of the predicate) to peripheral, the other axis a number of creole languages, arranged according to the general amount of West African features that they possess. It cannot be disproved that phonetic properties of target language prepositions contributed to their incorporation into creoles; but this is certainly not the general pattern.

In creole languages, serial constructions differ in structural coherence between the verbs involved (which has implications for their rigidity in movement rules), and in possible preposition-like characteristics; but nowhere do we find any of the finite features that B discusses for perception clauses. There are no replicated subjects, no tense or aspect markers in serial verb constructions. On the contrary, we find only bare (prepositional? verbal?) phrases. Nor is it possible, at least for Sranan, to claim (as B does) that serial constructions represent the older stage, and prepositions the newer stage of the language. Sebba (p.c.) has found a wide range of new uses for serial constructions, and the historical documents do not show fewer prepositions. From the beginning, it appears, prepositions and serial verbs have existed side by side; the cases where both could be used have been differentiated by distinctions of focus and definiteness in the argument involved.

But suppose that oblique relations were quite generally marked by serial verbs in the early creoles. Is it to be expected that these were finite constructions? One would think not—since it is precisely the non-finiteness, the bareness of the serial clause, that makes it possible for its complement NP to be interpreted as an (oblique) argument of the higher verb.

This concludes the survey of the potential bio-program features which can be induced from the confrontation of HCE with a number of other creoles. Of those features which recur in the detailed discussions of B's Chaps. III–IV, on acquisition and language origins, the only ones which stand up to inspection are the distinctions specific/non-specific, state/process, punctual/non-punctual, and causative/non-causative—all paradigmatic semantic features. Some of this

is sensed by B when he writes (65):

'It is worth noting that the similarities are most striking where a combination of semantic and syntactic factors interact; where purely syntactic rules are involved, as with movement rules and relativization, there is a lesser degree of identity.'

Why? The tentative explanation is given in a footnote (318):

'This result would issue very naturally if the semantics of language depended partly on relatively old neural structures while syntax depended partly on relatively new neural structures but also partly on extraneural factors intrinsic to the task of building a linear vocal language.'

In this way, then, only SOME roots are laid bare by B's work. However, the way he succeeds in linking creole materials with a re-analysis of acquisition data, and with a very exciting series of observations about the possible origins of language, is noteworthy. His book is certainly worthy of respect even from specialists who (like the present reviewer) prefer to make cautious but firmly-based statements about their respective intellectual provinces.³

A final note. B's belief, or conviction, or hypothesis that creole languages are somehow simpler in structure than other languages strikes me as odd or inappropriate in two ways. First, nothing in my work on the syntax of creole languages has suggested that they were in any sense simple; in fact, their complexities continue to baffle me. Second, nothing in my work on Quechua—an Amerindian language, typologically as different as possible from a creole—has suggested that I am dealing with a somehow unnatural cultural construct, the result of a long series of changes away from the biological language. Quechua is as simple, or as complicated, as creole languages;⁴ certainly, both are constructed with an implacable logic. Bickerton is to be commended for suggesting a series of new ways of identifying that logic.

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³ *Roots* is well-produced, contains almost no printing errors, and has both subject and author indexes.

⁴ The reader might object that Quechua, a 'colonial' language (in the sense that the Incas formed colonies throughout the Andes), has itself undergone a process of pidginization. Numerous varieties of Quechua were not involved in the Inca expansion, however; and for them the same remark holds.